

REFLECTIVE LUTS V6.2.2.85 (Terra) / V6.2.3.11 (Aqua)

| LUT NAME | DESCRIPTION | DIMENSIONS | | | | | Total Number of Elements | Terra (T) or Aqua (A) Only | TIME DEPENDENT LUTS ONLY | | | |
|------------------------------------|--|------------|-----|---|---|-------|--------------------------|----------------------------|--------------------------|-------|------|----------------------------|
| | | B | D | S | M | Other | | | # of Table Pieces | TERRA | AQUA | Type of Time Dependent LUT |
| V6.2.2.85 | V6.2.3.11 | | | | | | | | | | | |
| B26_B5_Corr_Switch | Flag to turn on (1) or off (0) the Band 26 correction | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | | Step Function LUT |
| B26_B5_Corr | Correction coefficients for the Band 26 correction | 1 | 10 | 1 | 1 | 1 | 10 | | 3 | 1 | | Step Function LUT |
| B26_B5_Frame_Offset | Frame offset to use for the Band 26 correction | 1 | 10 | 1 | 1 | 1 | 10 | | | | | |
| DN_abc_avg_first_frame_to_use | Index of 1st frame to use when computing average OBC DN. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| DN_abc_avg_number_of_frames_to_use | Number of frames to use to compute average OBC DN. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| dn_sat_ev | Value of EV pixel dn to treat as saturated | | | | | | 1340* | 1340* | | 14 | 10 | Step Function LUT |
| dn_star_Max | Maximum dn** value for scaling to the product scaled integer | 22 | 1 | 1 | 1 | 1 | 22 | | | | | |
| dn_star_Min | Minimum dn** value for scaling to the product scaled integer | 22 | 1 | 1 | 1 | 1 | 22 | | | | | |
| E_sun_over_pi | RSR-weighted solar irradiance/pi for RSB detectors | 1 | 330 | 1 | 1 | 1 | 330 | | | | | |
| K_FPA | Focal Plane Array Temperature Correction Factor | | | | | | 1340* | 1340* | | | | |
| K_inst | Instrument Temperature Correction Factor | | | | | | 1340* | 1340* | | 3 | 1 | Step Function LUT |
| m0 | Reflectance Calibration offset | | | | | | 1340* | 1340* | | | | |
| m1 | Reflectance Calibration linear terms | | | | | | 1340* | 1340* | | 519 | 328 | Piecewise Linear LUT |
| RSB_specified_uncertainty | Factor used in computing uncertainty index | 22 | 1 | 1 | 1 | 1 | 22 | | | | | |
| RSB_SV_DN_moon_include_frames | Number of frames after sorting if moon in SVP | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| RSB_UI_scaling_factor | Factor used in computing uncertainty index | 22 | 1 | 1 | 1 | 1 | 22 | | | | | |
| RVS_RefSB | Quartic coefficients for calculating the EV RVS for RSB | 22 | 40 | 1 | 2 | 5 | 8800 | | 221 | 235 | | Piecewise Linear LUT |
| Serial Number of Reflective LUT | Version number of reflective calibration LUTs | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| SWIR_OOB_correction_switch | Flag which turns on (1) or off (0) SWIR OOB leak correction. | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | Step Function LUT |
| SWIR_OOB_sending_band | Number of the "sending band" for the SWIR OOB leak correction | 1 | 1 | 1 | 1 | 1 | 1 | | 2 | 1 | | Step Function LUT |
| SWIR_OOB_sending_detector | Numbers of the "sending detector" for the SWIR OOB leak correction | 1 | 10 | 1 | 1 | 1 | 10 | | 1 | 1 | | Step Function LUT |
| T_FPA_ref | Focal Plane temperature reference | 1 | 1 | 1 | 1 | 4 | 4 | | | | | |
| T_inst_ref | Instrument temperature reference | 1 | 1 | 1 | 1 | 1 | 1 | | 3 | 1 | | Step Function LUT |
| X_OOB_0 | Coefficients of quadratic SWIR band correction formula | 4 | 20 | 2 | 2 | 1 | 320 | | 1 | 1 | | Step Function LUT |
| X_OOB_1 | Coefficients of quadratic SWIR band correction formula | 4 | 20 | 2 | 2 | 1 | 320 | | 15 | 1 | | Step Function LUT |
| X_OOB_2 | Coefficients of quadratic SWIR band correction formula | 4 | 20 | 2 | 2 | 1 | 320 | | 1 | 1 | | Step Function LUT |
| u1 | The uncertainty due to calibrations using on-board calibrators. | 1 | 330 | 1 | 1 | 1 | 330 | | 16 | 1 | | Step Function LUT |
| u2 | The uncertainty term which is AOI and time independent. | 1 | 330 | 1 | 2 | 7 | 4620 | | 31 | 29 | | Step Function LUT |
| u3 | The uncertainty due to temperature impact. | 1 | 330 | 1 | 2 | 1 | 660 | | 16 | 1 | | Step Function LUT |
| u4 | Scene dependent noise to signal ratio. | 22 | 40 | 4 | 2 | 3 | 21120 | | 31 | 29 | | Step Function LUT |
| swir_ui_factor | The factor for uncertainty due to cross talk correction for SWIR. | 4 | 1 | 1 | 1 | 1 | 4 | | 1 | 1 | | Step Function LUT |
| u2_frames | Frames loaded with RSB u2 uncertainty. | 1 | 1 | 1 | 1 | 7 | 7 | | 1 | 1 | | Step Function LUT |

* 1340 is the total of the products of the Bands, detectors, number of samples, and number of mirror sides for the 250m Bands, the 500m Bands, and the 1KM RSBs. LUTs with this dimension were dimensioned as 22 x 40 x 4 x 2 (B, D, S, M respectively) in LUT HDF files created for L1B Versions 3.1.0 and lower.

QA LUTS V6.2.2.85 (Terra) / V6.2.3.11 (Aqua)

| LUT NAME | DESCRIPTION | DIMENSIONS | | | | | Total Number of Elements | Terra (T) or Aqua (A) Only | TIME DEPENDENT LUTS ONLY | | | |
|-------------------------------------|--|------------|-----|---|---|-------|--------------------------|----------------------------|--------------------------|-------|------|----------------------------|
| | | B | D | S | M | Other | | | # of Table Pieces | TERRA | AQUA | Type of Time Dependent LUT |
| V6.2.2.85 | V6.2.3.11 | | | | | | | | | | | |
| a1 | Pre-launch averages of MODIS linear response term for each emissive detector. | 16 | 10 | 1 | 1 | 1 | 160 | | | | | |
| ALGORITHMPACKAGEACCEPTANCE_DATE | Algorithm package date; written to ECS archive metadata. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| ALGORITHMPACKAGEMATURITYCODE | Algorithm package maturity code; written to ECS archive metadata. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| ASSOCIATEDPLATFORMSHORTNAME | Platform (e.g., TERRA or AQUA). | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| BB Average Temperature Variance | Pre-launch variance of the average BB temperature. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| Cavity Temperature Variance | Pre-launch variance of the cavity temperature. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| Control options | Miscellaneous code switches | 1 | 1 | 1 | 1 | 2 | 2 | | | | | |
| Detector Quality Flag Values | Integer array identifying noisy, dead and anomalous detectors. | 1 | 490 | 1 | 1 | 8 | 3920 | | 53 | 26 | | Step Function LUT |
| Detector Quality Flag2 Values | Integer array identifying noisy and dead subframes. | 1 | 180 | 1 | 1 | 8 | 1440 | | 1 | 1 | | Step Function LUT |
| Instrument Temperature Variance | Pre-launch variance of the instrument temperature. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| LWIR FPA Temperature Variance | Pre-launch variance of the LWIR FPA temperature. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| Mirror Average Temperature Variance | Pre-launch variance of the average mirror side temperature. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| MirrorSide 1 Temperature Variance | Pre-launch variance of the mirror side 1 temperature. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| MirrorSide 2 Temperature Variance | Pre-launch variance of the mirror side 2 temperature. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| mission phase | Mission phase. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| Moon Offset Limits | Defines the limits of the "Keep-out" box relative to center of SVP. (This is not strictly a QA LUT because it is used in processing) | 38 | 1 | 1 | 1 | 4 | 152 | | | | | |
| MWIR FPA Temperature Variance | Pre-launch variance of the MWIR FPA temperature. | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| NEdL | Pre-launch noise equivalent difference in radiance for each emissive detector. | 16 | 10 | 1 | 1 | 1 | 160 | | | | | |
| NIR FPA base variance | Pre-launch variance of the NIR FPA temperature | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| QA serial number | Version of the science content of the QA LUTs | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| Spacecraft_Roll_Threshold_Angle | Upper limit of the absolute deviation from nominal allowed in the spacecraft roll angle | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| Spacecraft_Pitch_Threshold_Angle | Upper limit of the absolute deviation from nominal allowed in the spacecraft pitch angle | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| Spacecraft_Yaw_Threshold_Angle | Upper limit of the absolute deviation from nominal allowed in the spacecraft yaw angle | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| T_BB_Variance | Pre-launch variance of each of the 12 BB temperatures. | 1 | 1 | 1 | 1 | 12 | 12 | | | | | |
| visual FPA base variance | Pre-launch variance of the VIS FPA temperature | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |

EMISSIVE LUTS V6.2.2.85 (Terra) / V6.2.3.11 (Aqua)

| LUT NAME | DESCRIPTION | DIMENSIONS | | | | | Total Number of Elements | Terra (T) or Aqua (A) Only | TIME DEPENDENT LUTS ONLY | | |
|---|--|------------|----|---|---|-------|--------------------------|----------------------------|--------------------------|-------|----------------------|
| | | B | D | S | M | Other | | | # of Table Pieces | TERRA | AQUA |
| V6.2.2.85 | V6.2.3.11 | | | | | | | | | | |
| A0 | Quadratic coefficients for calculating a0 | 16 | 10 | 1 | 2 | 3 | 960 | | 54 | 16 | Step Function LUT |
| A2 | Quadratic coefficients for calculating a2. | 16 | 10 | 1 | 2 | 3 | 960 | | 54 | 16 | Step Function LUT |
| Band_21_b1 | The value of b1 for each Band 21 detector. | 1 | 10 | 1 | 2 | 1 | 20 | | 49 | 32 | Step Function LUT |
| Serial_Number_of_Emissive_LUT | Version number of emissive calibration LUTs | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| BB_DN_first_frame_to_use | Index of 1st frame for computing BB DN averages | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| BB_DN_number_of_frames_to_use | Number of frames for computing BB DN averages | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| BB_T_sat_aqua | Saturation temperature for bands 33, 35, and 36 | 3 | 1 | 1 | 1 | 1 | 3 | A | | | |
| bb_t_sat_default_b1_baseline_aqua | Default b1 baseline for bands 33, 35, and 36 to use if saturated on BB warmup | 3 | 10 | 1 | 2 | 1 | 60 | A | | 50 | Step Function LUT |
| bb_t_sat_default_b1_c1_aqua | The scale factor for the temperature correction | 3 | 10 | 1 | 2 | 1 | 60 | A | | 39 | Step Function LUT |
| bb_t_sat_default_b1_Tlwir_baseline_aqua | The baseline temerature for LWIR fpa | 1 | 1 | 1 | 1 | 1 | 1 | A | | 1 | Step Function LUT |
| BB_T_sat_switch_aqua | Flag to switch to default b1 for bands 33, 35, 36 when BB temperature is above saturation temperature. | 1 | 1 | 1 | 1 | 1 | 1 | A | | | |
| BB_Weight | Weight factor used for computing average BB temperature. | 1 | 1 | 1 | 1 | 12 | 12 | | | | |
| delta_T_bb_beta | The "b" term in the equation for calculating DT_bb. | 16 | 10 | 1 | 1 | 1 | 160 | | | | |
| delta_T_bb_delta | The "D" term in the equation for calculating DT_bb. | 16 | 10 | 1 | 1 | 1 | 160 | | | | |
| epsilon_bb | Black-body emissivity. | 16 | 10 | 1 | 1 | 1 | 160 | | | | |
| epsilon_cav | Effective cavity emissivity. | 16 | 10 | 1 | 1 | 1 | 160 | | | | |
| L_Max | Top end of radiance dynamic range | 16 | 1 | 1 | 1 | 1 | 16 | | | | |
| L_Min | Bottom end of radiance dynamic range | 16 | 1 | 1 | 1 | 1 | 16 | | | | |
| MCST_Version | 4-digit ALGORITHM PACKAGE VERSION (e.g. "4.0.5.2_Terra") | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| num_overlap_scans_b1 | Number of scans in leading and trailing granules for cross-granule averaging of b1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| NWL | Number of values in RSR distribution. | 16 | 10 | 1 | 1 | 1 | 160 | | | | |
| PC_XT | PC bands cross-talk correction parameters. | 5 | 10 | 1 | 1 | 4 | 200 | | | | |
| PCX_correction_switch | Switch (0 = OFF, 1 = ON) for the Xtalk correction | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| RSR* | Relative spectral responses | 16 | 10 | 1 | 1 | 49 | 7840 | T A | | | |
| | | 16 | 10 | 1 | 1 | 66 | 10560 | | | | |
| RVS_BB_SV_Frame_No | Frame number for calculating the BB and SV RVS | 1 | 1 | 1 | 1 | 2 | 2 | | | | |
| RVS_TEB | Quadratic coefficients for calculating EV RVS for TEBs | 16 | 10 | 1 | 2 | 3 | 960 | | 3 | 1 | Piecewise Linear LUT |
| pvlw_xt_coeff | PV LWIR bands cross-talk correction parameters | 4 | 10 | 1 | 1 | 120 | 4800 | | 239 | 7 | Step Function LUT |
| mwir_xt_coeff | MWIR bands cross-talk correction parameters | 7 | 10 | 1 | 1 | 210 | 14700 | A | | 1 | Step Function LUT |
| SV_DN_first_frame_to_use | Index of 1st frame for computing SV DN averages | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| SV_DN_moon_include_frames | Number of frames after sorting if Moon in SVP | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| SV_DN_number_of_frames_to_use | Index of 1st frame for computing SV DN averages | 1 | 1 | 1 | 1 | 1 | 1 | | | | |

* Note that Terra and Aqua have differing numbers of allowed wavelengths for these tables.

* more tables in the next page

EMISSIVE LUTS V6.2.2.85 (Terra) / V6.2.3.11 (Aqua) (Cont'd)

| LUT NAME | DESCRIPTION | DIMENSIONS | | | | | Total Number of Elements | Terra (T) or Aqua (A) Only | TIME DEPENDENT LUTS ONLY | | | |
|---------------------------|--|------------|----|---|---|-------|--------------------------|----------------------------|--------------------------|-------|-------------------|----------------------------|
| | | B | D | S | M | Other | | | # of Table Pieces | TERRA | AQUA | Type of Time Dependent LUT |
| V6.2.2.85 | V6.2.3.11 | | | | | | | | | | | |
| T_cav_default | Default value of cavity temperature in K | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| T_cav_function_flag | Identifies suitable cavity temperature thermistors. | 1 | 1 | 1 | 1 | 4 | 4 | | | | | |
| T_ins_default | Default value of instrument temperature in K | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| T_ins_function_flag | Identifies suitable instrument temperature thermistors. | 1 | 1 | 1 | 1 | 4 | 4 | | | | | |
| T_ins_offset | Instrument temperature offset in K. | 1 | 1 | 1 | 1 | 4 | 4 | | | | | |
| T_mir_default | Default value of mirror temperature in K | 1 | 1 | 1 | 1 | 1 | 1 | | | | | |
| T_mir_function_flag | Identifies suitable mirror temperature thermistors. | 1 | 1 | 1 | 1 | 2 | 2 | | | | | |
| TEB_specified_uncertainty | Factor used in computing uncertainty index | 16 | 1 | 1 | 1 | 1 | 16 | | | | | |
| TEB_UI_scaling_factor | Factor used in computing uncertainty index | 16 | 1 | 1 | 1 | 1 | 16 | | | | | |
| WAVELENGTH* | Wavelengths at points of RSRs | 16 | 10 | 1 | 1 | 49 | 7840 | T A | | | | |
| | | 16 | 10 | 1 | 1 | 66 | 10560 | | | | | |
| sigma_a0 | Coefficients of polynomial fit of uncertainty due to a0. | 16 | 10 | 1 | 2 | 3 | 960 | | 30 | 23 | Step Function LUT | |
| sigma_a2 | Coefficients of polynomial fit of uncertainty due to a2. | 16 | 10 | 1 | 2 | 3 | 960 | | 30 | 23 | Step Function LUT | |
| sigma_b1_B21 | uncertainty due to band 21 b1. | 1 | 10 | 1 | 2 | 1 | 20 | | 30 | 24 | Step Function LUT | |
| sigma_epsilon_bb | uncertainty due to Black-body emissivity. | 16 | 1 | 1 | 1 | 1 | 16 | | 1 | 1 | Step Function LUT | |
| sigma_epsilon_cav | uncertainty due to cavity emissivity. | 16 | 1 | 1 | 1 | 1 | 16 | | 1 | 1 | Step Function LUT | |
| sigma_L_lambda | uncertainty due to wavelength. | 16 | 1 | 1 | 1 | 2 | 32 | | 1 | 1 | Step Function LUT | |
| sigma_L_Tbb | uncertainty due to Black-body temperature | 16 | 1 | 1 | 1 | 1 | 16 | | 1 | 1 | Step Function LUT | |
| sigma_L_Tcav | uncertainty due to cavity temperature | 16 | 1 | 1 | 1 | 1 | 16 | | 1 | 1 | Step Function LUT | |
| sigma_L_Tsm | uncertainty due to scan mirror temperature | 16 | 1 | 1 | 1 | 1 | 16 | | 1 | 1 | Step Function LUT | |
| sigma_RVS_ev | Coefficients of polynomial fit of uncertainty due to RVS | 16 | 10 | 1 | 2 | 3 | 960 | | 1 | 1 | Step Function LUT | |
| pcx_ui_factor | The factor for uncertainty due to cross talk correction | 5 | 1 | 1 | 1 | 1 | 5 | A | 0 | 1 | Step Function LUT | |
| xt_ui_factor | The factor for uncertainty due to cross talk correction | 16 | 10 | 1 | 1 | 1 | 160 | T | 1 | 0 | Step Function LUT | |

* Note that Terra and Aqua have differing numbers of allowed wavelengths for these tables.